



Exploratory survey study of long-term users of nicotine replacement therapy in Danish consumers

Borup, Gitte; Christrup, Lona Louring; Lyngby Mikkelsen, Kim; Tønnesen, Philip

Publication date:
2014

Document version
Early version, also known as pre-print

Citation for published version (APA):
Borup, G., Christrup, L. L., Lyngby Mikkelsen, K., & Tønnesen, P. (2014). *Exploratory survey study of long-term users of nicotine replacement therapy in Danish consumers*. Poster session presented at SRNT Europe Annual Meeting, Santiago de Compostela, Spain.



Long-term use of nicotine replacement therapy

An exploratory survey study in the national Danish population

Borup G¹, Mikkelsen KL², Tønnesen P³, Christrup LL¹

For correspondence: gb@sund.ku.dk

¹Department of Drug Design and Pharmacology
²Danish Patient Compensation association
³Danish Centre for Sleep Medicine, Glostrup Hospital

Background

Results from clinical trials on smoking cessation have shown that highly nicotine dependent smokers are more likely to become long-term users of nicotine replacement therapy (NRT). Long-term use of NRT has been approved in several countries for smokers who are unable or unwilling to quit smoking. However, information on basic characteristics, degree of nicotine dependence, health status and contentment with long-term use of NRT is scarce.

Aims

Besides obtaining basic demographics, the aim of the study was to investigate long-term users of NRT in Denmark with respect to:

- Contentment with long-term NRT use, including reasons for sustaining or wishing to quit the use of NRT.
- Degree of nicotine dependence estimated by means of a modified HSI-scale.
- Correlation between current NRT-use and recalled smoking

Table 1 Basic characteristics, smoking history and current NRT use. Total of respondents (n = 92)

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Men (% , N)	45.7 (42)
Mean age (SD, range)	52.0 (10.6, 33-75)
Mean duration of NRT use in years (SD, range)	5.5 (4.5, 1-27)
Mean current NRT use*# (SD, range)	15.0 (9.4, 3-60)
Mean former smoking years (SD, range)	27.4 (11.5, 5-53)
Mean recalled smoking \$ (SD, range)	19.5 (8. 38, 5-60)
Wish to quit NRT (% , N)	88.0 (81)
Felt addicted to NRT (% ,N)	77.2 (71)

* Including respondents using only acute single dose NRT.
Expressed as NRT pieces/day, \$ Expressed as cigarettes/day
NRT Nicotine replacement therapy

Table 2 Classification of dependence according to the Heaviness of Smoking Index (HSI score)

	A = 3 points (0-5 min)	B = 2 points (6-30 min)	C = 1 point (31-60 min)	D = 0 points (later)
A = 0 points (≤ 10)	4	8	6#	8#
B = 1 point (11-20)	15	10	9	3 #
C = 2 points (21-30)	4 *	5	-	-
D = 3 points (31 ≤)	2 *	1*	-	-

Note. Classification of dependence includes respondents using only acute acting single dose NRT. Patch, e-cigarette and inhaler-users were omitted (n=75). The time intervals in the columns indicate time to first NRT after waking. The intervals given in the rows indicate number of NRT doses per day.

* Indicates highly nicotine dependent respondents (Score 5-6) = 9.3 % (N=7). # Indicates respondents found low dependent on nicotine (Score 0-1) = 22.7 % (N=17). Respondents moderately dependent on nicotine (Score 2-4) = 68.0 % (N=51).

NRT Nicotine replacement therapy

Methods

Through advertisements in three national Danish newspapers, long-term NRT users were recruited to answer a short questionnaire. Questions on basic characteristics, health status, and contentment with NRT use were asked. A modified version of the Heaviness of Smoking Index (HSI)-questionnaire was applied to estimate nicotine dependence, and give a validation check hereof. Linear regression was used to test association between time to first NRT in the morning and NRT-use.

Results

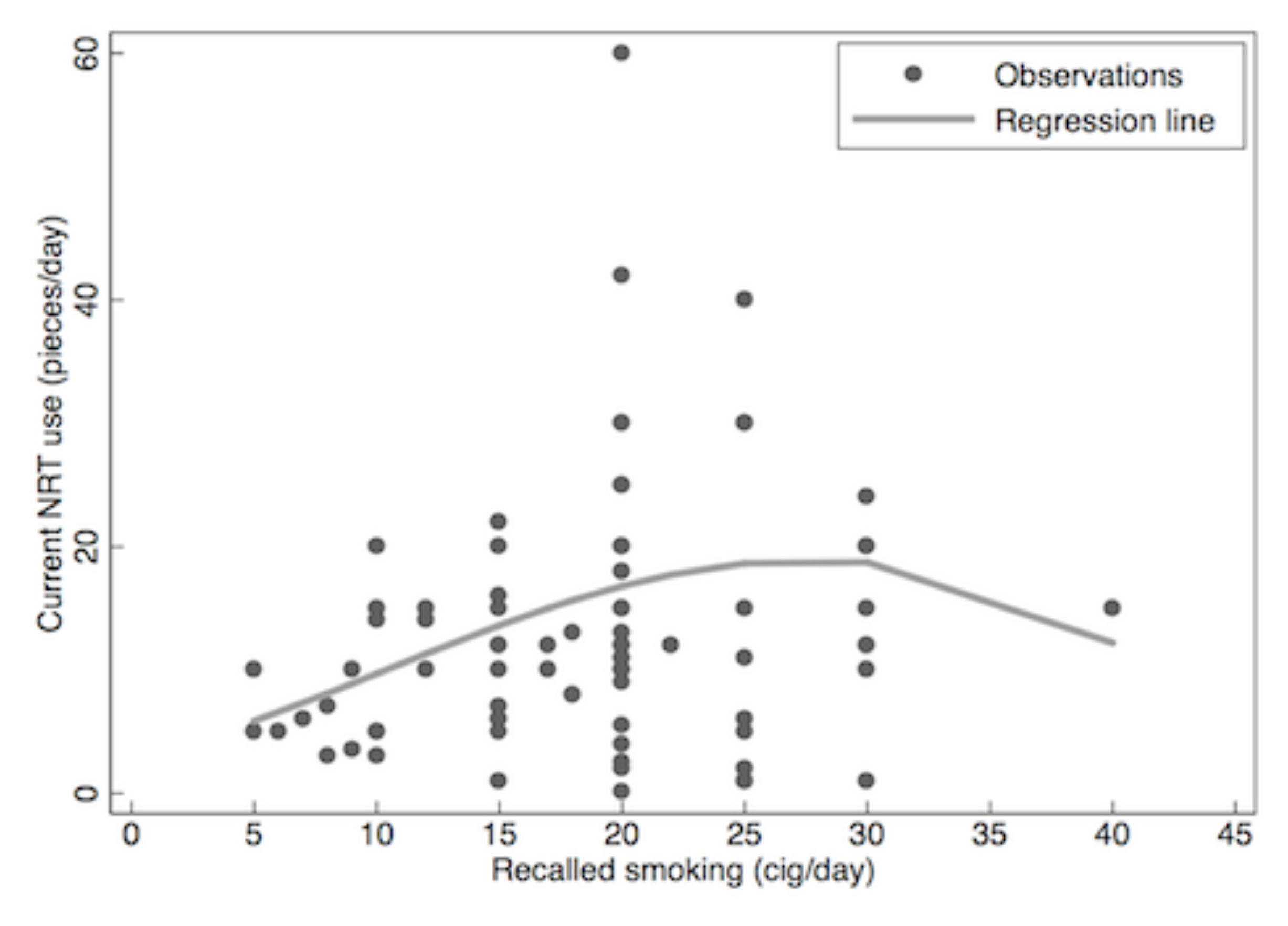
Results from 92 former smokers, were included in the data analysis.

- Basic characteristics see table 1.
- Reasons for wishing to quit were primarily costs of NRT, being tired of feeling addicted, and fear of adverse health effects.
- Dependence estimated from a modified HSI-scale see table 2.
- A strong linear association was found between time to first NRT in the morning and NRT-use (data not shown).
- Correlation between current NRT and recalled smoking see figure 1.

Conclusion

- A significant majority (88%) wished to quit NRT because of cost of products, being tired of feeling addicted, and fear of adverse health consequences.
- Nicotine dependence on NRT was estimated primarily to be moderate to high.
- The strong association between TTFN and NRT use found, gives reason to believe the validity of the modified HSI. Further studies are required.
- The equivalence ratio of 0.86:1 found when comparing current NRT use to recalled smoking, indicates that some degree of nicotine dependence is transferred when replacing smoking with NRT long-term.

Figure 1 Equivalence ratio between current NRT-use and recalled smoking



Note. The regression line is based on a fractional polynomial regression and includes respondents using acute acting single dose NRT (N=75). One outlier with high recalled cig/day and low NRT pieces/day was omitted (delta-beta = -8.1 SD)

Logistic regression up to and including 25 cig/day showed a significant equivalence ratio of 0.86.

No significance was found for those with recalled smoking of more than 25 cig/day.